

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Washington Regional Office
County: Pitt
NC Facility ID: 7400104
Inspector's Name: Kurt Tidd
Date of Last Inspection: 04/08/2020
Compliance Code: 3 / Compliance - inspection

<p align="center">Facility Data</p> <p>Applicant (Facility's Name): Grady-White Boats, Inc.</p> <p>Facility Address: Grady-White Boats, Inc. 5121 MLK Jr. Highway Greenville, NC 27834</p> <p>SIC: 3732 / Boat Building and Repairing NAICS: 336612 / Boat Building</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p align="center">Permit Applicability (this application only)</p> <p>SIP: 02D .0515, .0516, .0521, 1111, 1806 NSPS: NA NESHAP: MACT VVVV, ZZZZ PSD: NA PSD Avoidance: 02Q .0317 (NOx, VOC) NC Toxics: NA 112(r): NA Other:</p>
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Contact Data			Application Data
<p align="center">Facility Contact</p> <p>James Hardin Compliance/Facility Manager (252) 752-2111 PO Box 1527 Greenville, NC 27835</p>	<p align="center">Authorized Contact</p> <p>James Hardin Compliance/Facility Manager (252) 752-2111 PO Box 1527 Greenville, NC 27835</p>	<p align="center">Technical Contact</p> <p>W.F. Bulow Consultant (252) 916-7391 PO Box 309 Ayden, NC 28513</p>	<p>Application Number: 7400104.20A Date Received: 06/04/2020 Application Type: Renewal Application Schedule: TV-Renewal <p align="center">Existing Permit Data</p> Existing Permit Number: 05630/T13 Existing Permit Issue Date: 07/21/2017 Existing Permit Expiration Date: 09/30/2020</p>

Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2018	1.49	8.86	55.08	2.03	2.80	53.02	47.84 [Styrene]
2017	1.67	9.90	50.04	2.27	2.67	49.74	45.63 [Styrene]
2016	1.32	7.83	43.97	1.79	2.30	43.74	40.17 [Styrene]
2015	1.26	7.48	41.44	1.71	2.21	41.20	37.90 [Styrene]
2014	1.57	9.29	37.60	2.13	2.05	37.56	34.36 [Styrene]

<p>Review Engineer: Eric Crump</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p align="center">Comments / Recommendations:</p> <p>Issue 05630/T14 Permit Issue Date: _____ Permit Expiration Date: _____</p>
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1. Purpose of Application

Grady-White Boats, Inc. (referred to hereafter as Grady-White) is a boat building and repair facility located in Greenville, Pitt County, North Carolina. The facility operates under Title V Permit No. 05630T13 with an expiration date of September 30, 2020. Grady-White has applied for renewal of their facility's air quality permit. The renewal application was received on June 4, 2020—less than six months prior to the expiration date. Therefore, the existing permit shall expire unless the renewal permit has been issued prior to the expiration date. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

Through permit application No. 7400104.20A, Grady-White has included a second paint spray booth to the facility for painting fiberglass boat hulls.

2. Facility Description

Grady-White manufactures 18 to 45-foot-long powerboats. The facility is a Title V major source for volatile organic compounds (VOCs) and currently employs approximately 350 people. The facility produces roughly 10 to 15 boats per week.

The boat manufacturing process starts with the application of gel coat to fiberglass molds, followed by application of fiberglass mat and resin to the gel coat (along with filler material such as pre-cut plywood or foam for various pieces for strength and rigidity). The boats are made in three basic pieces: deck, hull, and liner. In addition to the styrene/polyester areas, Grady-White has a woodworking area serviced by three baghouses—two for woodworking and one for fiberglass grinding. The baghouses are vented back into the facility.

3. Application Chronology

October 14, 2015	Division of Air Quality (DAQ) issues Permit No. 05630T12 to Grady-White as a Title V renewal.
August 23, 2016	Randall Jones, Washington Regional Office (WaRO) conducts facility compliance inspection. Facility appeared to be operating in compliance with all permit requirements.
June 14, 2017	Randall Jones and David Harwood, WaRO conduct facility compliance inspection. The inspection revealed that (1) the facility had not performed subsequent testing of their peak shaving generators required by 40 CFR 63 Subpart ZZZZ, and (2) the permit incorrectly required semi-annual testing instead of testing every three-years.
June 30, 2017	DAQ issues Notice of Violation to Grady-White for failure to perform subsequent testing of their peak shaving generators required by 40 CFR 63 Subpart ZZZZ.
July 6, 2017	DAQ receives permit application No. 7400104.17A from Grady-White for an administrative amendment to the permit to correct the testing frequency requirement for peak shaving generators under 40 CFR 63 Subpart ZZZZ.
July 21, 2017	DAQ issues Permit No. 05630T13 to Grady-White as an administrative amendment to the permit.

August 3, 2017	Randall Jones, WaRO conducts partial compliance inspection and observation of generator stack testing. Facility appears to be operating in compliance with all permit requirements.
December 5, 2017	Brent Hall, Stationary Source Compliance Branch, DAQ issues review of emissions testing for generators (ID Nos. ES2 and ES3). Review states test results are acceptable and indicate compliance with 40 CFR 63 Subpart ZZZZ.
March 19, 2018	DAQ issues Permit Applicability Determination No. 3277 to Grady-White approving of a proposed addition to the building and an additional exhaust vent in the lamination area. A permit modification is not required.
April 12, 2018	Kurt Tidd, WaRO conducts facility compliance inspection. Facility appeared to be operating in compliance with all permit requirements.
May 13, 2019	Grady White submits 502(b)(10) notification to DAQ for addition of a new paint spray booth.
May 30, 2019	Kurt Tidd, WaRO conducts facility compliance inspection. Facility appeared to be operating in compliance with all permit requirements.
April 8, 2020	Kurt Tidd, WaRO conducts partial facility compliance evaluation via file review and facility contact telephone interview. No compliance issues were discovered.
June 4, 2020	DAQ receives permit renewal application No. 7400104.20A from Grady-White.
August 5, 2020	Draft permit sent to Grady-White and WaRO for review and comment.
August 7, 2020	Comments on draft permit received from WaRO.
August 10, 2020	Comments on draft permit received from Grady-White.
xxx	Region IV of the U.S. Environmental Protection Agency (EPA) notifies DAQ they will/will not target this permit renewal for review.
xxx	Permit renewal notice published, 30-day public notice and comment period begins, and 45-day EPA comment period begins.
xxx	30-day Public notice and comment period ends.
xxx	45-day EPA comment period ends.

4. Permit Modifications and Title V Equipment Editor (TVEE) Discussion

The following table summarizes changes to the Grady-White permit resulting from the permit renewal:

Page No.	Section	Description of Changes
Cover and throughout	---	Updated all dates and permit revision numbers
Insignificant Activities List	Attachment	Added paint spray booth (Source ID No. IES-5)
3	2.1 A.1	Updated section to reflect the most current stipulations for 15A NCAC 02D .0515
6	2.1 A.3	Updated section to reflect the most current stipulations for 40 CFR Part 63, Subpart ZZZZ
7	2.1 A.3.n.ii	Added initial performance test date
10	2.1 A.4	Updated section to reflect the most current stipulations for 15A NCAC 02Q .0317 and 02D .0530
12	2.2 A.1	Updated section to reflect the most current stipulations for 15A NCAC 02Q .0317 and 02D .0530
13	2.2 B.1	Updated section to reflect the most current stipulations for 40 CFR Part 63, Subpart VVVV I (including CEDRI electronic reporting requirements)
	3	Updated General Conditions to Version 5.4 dated July 20, 2020

The only change made to the Title V Equipment Editor (TVEE) is the addition of the following source:

Paint spray booth (Source ID No. IES-5)

5. Description of Changes and Estimated Emissions

On May 13, 2019, Grady-White submitted a Section 502(b)(10) notification under 15A NCAC 02Q .0523(a) for the addition of a second paint spray booth (Source ID No. IES-5) to the facility, which will allow them to paint hulls for larger fiberglass boats. The new booth has three exhausts with integral filters vented to the outside. Because the existing paint spray booth (Source ID No. IES-3) had been classified as an insignificant activity, Grady-White requested the second booth be similarly classified.

15A NCAC 02Q .0503(8) defines an insignificant activity as “. . . any activity whose emissions would not violate any applicable emissions standard and whose potential emission of [criteria pollutants] before air pollution control devices, are each no more than five tons per year and whose potential emissions of [hazardous air pollutants (HAP)] before air pollution control devices, are each below 1000 pounds per year.”

Potential emissions for the spray booth are based on the maximum annual production output of the Grady-White facility—61 boats, based on historical production records and forecasted demand. The facility is set up for batch production of boats and could not practically sustain continuous production 24 hours per day, 365 days per year.

The following table provides composition data for the different types of paints used at the Grady-White facility, along with estimates of potential paint usage, assuming 61 boats per year. Volatile organic compounds, or VOC, are the only criteria pollutant emitted from the booth. Several HAP are emitted from the paint spray booth; these are listed in the table.

Parameter	Paint Category				
	Acrylic Paint, Harbor Blue/Grey	Acrylic Paint, Flat Black	Clear Coat	Reducer	Hardener
Average Paint Use, gallons per boat	0.59	0.87	0.94	0.96	0.6
Potential Boats per Year	61	61	61	61	61
Potential Paint Use, gallons per year	36	53	57	59	37
Paint Density, pounds per gallon	7.92	8.32	7.94	7	7.7
VOC, by percent (%)	73	67.4	51	100	53
HAP, %	13	17	36	17	1
2-Butanone/MBK, %	2	0	0	19	0
Ethylbenzene, %	2	3.5	5.3	1	1
Glycol ethers, %	6	0	0	0	0
Methyl isobutyl ketone, %	2	0	0	0	0
Methyl methacrylate, %	1	0	0.2	0	0
Toluene, %	1	0	0	11	1
Xylene, %	10	13.9	30	5	0
Styrene, %	0	0	0.4	0	0

The following table provides estimates of potential emissions in pounds per year (lb/yr) and tons per year (ton/yr), assuming 100 percent of the pollutant content in the paint is emitted to the atmosphere.

Pollutant	Acrylic Paint, Harbor Blue/Grey, lb/yr	Acrylic Paint, Flat Black, lb/yr	Clear Coat, lb/yr	Reducer , lb/yr	Hardener , lb/yr	Total Emissions, lb/yr	Total Emissions , ton/yr
VOC	208	298	232	410	149	1297	0.65
HAP	37	75	164	70	3	348	0.17
2-Butanone/MBK	6	0	0	78	0	84	0.042
Ethylbenzene	6	16	24	4	3	52	0.026
Glycol ethers	17	0	0	0	0	17	0.0085
Methyl isobutyl ketone	6	0	0	0	0	6	0.003
Methyl methacrylate	3	0	1	0	0	4	0.002
Toluene	3	0	0	45	3	51	0.025
Xylene	28	61	137	21	1	247	0.12
Styrene	0	0		2	0	2	0.001

As shown above, potential emissions of VOC from the paint spray booth are well below five tons per year and potential emissions of each HAP are well below 1000 pounds per year. Therefore, the paint spray booth (No. IES-5) is an insignificant activity and will not be subject to permit conditions.

6. Regulatory Review

Grady-White is subject to the following state regulations from 15A NCAC:

Regulation	Title	Sources subject to regulation
02D .0515	Particulates from Miscellaneous Industrial Processes	Building No. 1 (laminating, gel coating, and assembly; ID No. ES-1)
02D .0516	Sulfur Dioxide Emissions from Combustion Sources	Two diesel-fired peak shaving generators (ID Nos. ES-2 and ES-3)
02D .0521	Control of Visible Emissions	<ul style="list-style-type: none"> Building No. 1 (laminating, gel coating, and assembly; ID No. ES-1) Two diesel-fired peak shaving generators (ID Nos. ES-2 and ES-3)
02D .1806	Control and Prohibition of Odorous Emissions (State enforceable only)	Entire facility
02D.1111	Maximum Achievable Control Technology (<i>see Section 7 below</i>)	<ul style="list-style-type: none"> Building No. 1 (laminating, gel coating, and assembly; ID No. ES-1) Two diesel-fired peak shaving generators (ID Nos. ES-2 and ES-3)
02Q .0317	Avoidance Conditions for 15A NCAC 02D .0530, Prevention of Significant Deterioration (<i>see Section 9 below</i>)	<ul style="list-style-type: none"> Two diesel-fired peak shaving generators (ID Nos. ES-2 and ES-3)(Nitrogen oxides) Entire facility (VOC)

The facility is not subject to any additional state regulations at this time, and there have been no changes to permit requirements for these existing regulations. The permit has been updated to reflect the most current stipulations for all applicable regulations. Continued compliance is expected.

7. National Emission Standards for Hazardous Air Pollutants (NESHAPS): Maximum and/or Generally Achievable Control Technology (MACT/GACT)

Grady-White is subject to the following NESHAP in 40 CFR Part 63:

- A. Subpart VVVV—National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing. Building No. 1 (ES-1), in which lamination, gel coating, and boat assembly take place, is subject to Subpart VVVV. This NESHAP limits HAP emissions from open molding operations by limiting the organic HAP content in production resins, gel coats, and tooling resins. Grady-White is required to keep records of the HAP content of materials used, the application methods, and quantities used in order to demonstrate compliance, and to implement work practice standards.

Changes to Subpart VVVV require electronic reporting to the EPA's Compliance and Emissions Data Reporting Interface (CEDRI). The permit conditions have been modified to include this requirement.

- B. Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The two diesel-fired peak shaving generators (ID Nos. ES-2 and ES-3) are subject to Subpart ZZZZ, which requires the use of ultra-low sulfur diesel fuel, use of an oxidation catalyst to limit CO emissions, and to control emissions from the crankcase. Continuous parameter monitoring systems (CPMS) to monitor the catalyst inlet temperature for each catalyst are required. This permit renewal does not affect this status. Continued compliance is expected.

8. New Source Performance Standards (NSPS)

Grady-White is not currently subject to any NSPS. This permit renewal does not affect that status.

9. New Source Review (NSR)/Prevention of Significant Deterioration (PSD)

Grady-White is currently subject to PSD avoidance conditions which limit facility-wide volatile organic compound (VOC) emissions to less than 250 tons per consecutive 12-month period, and nitrogen oxide (NO_x) emissions from the peak shaving generators to less than 250 tons per consecutive 12-month period. This permit renewal does not affect this status.

The facility is located in Pitt County, which has triggered increment tracking under PSD for NO_x. However, this permit renewal does not consume or expand increments for any pollutants.

Continued compliance is expected.

10. Risk Management Plan Requirements

40 CFR Part 68 requires stationary sources storing more than threshold quantities of regulated substances to develop a risk management plan (RMP), in accordance with Section 112(r) of the Clean Air Act. The RMP lists the potential effects of a chemical accident at the facility, steps the facility is taking to prevent an accident, and emergency response procedures to be followed if an accident should occur.

Grady-White is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any regulated substances in quantities above the thresholds in the Rule. This permit renewal does not affect the 112(r) status of the facility. Continued compliance is expected.

10. Compliance Assurance Monitoring (CAM)

Under 40 CFR Part 64, a facility must develop a continuous CAM plan for any pollutant specific unit meeting all of the following criteria:

- It is located at a major source required to obtain a 40 CFR Part 70 or Part 71 permit;
- It is subject to an emission limitation or standard for a regulated air pollutant (and that standard is not exempt under 40 CFR 64.2(a)(1)(b));
- It uses an active control device to comply with that emission limitation or standard; and
- It has a potential pre-control emission rate that equals or exceeds the major source threshold for criteria pollutants or HAPs.

CAM was determined in a preceding permit review to not be applicable because potential pre-controlled emissions (particulate) were less than CAM thresholds. The permit renewal does not affect that status. Continued compliance is expected.

11. Facility-wide Toxics Review

The Grady-White facility had been subject to toxics requirements in accordance with 15A NCAC 02D .1100, "Control of Toxic Air Pollutants" under Permit T11. Because the facility is subject to NESHAP, the toxic requirements were removed at the renewal for T12. A toxic emissions evaluation indicated the health risks were acceptable with the removal of the toxic requirements (see Y. Puram permit review, 10/14/2015). As stated in Section 7 above, continued compliance with the MACT standards is expected.

12. Facility Emissions Review

The table in the header page of this review summarizes emissions for Grady-White after application of required emission controls. Over the years 2014-2018, emissions of VOC, CO, PM₁₀, and total HAP have shown a modest increase, with styrene being the largest individual HAP emitted.

13. Compliance Status

Since the last permit renewal, Grady-White has been issued a Notice of Violation (NOV) for failure to perform subsequent testing of their peak shaving generators as required by 40 CFR 63 Subpart ZZZZ. The NOV was issued on June 30, 2017.

The Grady-White facility was last inspected on April 8, 2020 by Kurt Tidd of the Washington Regional Office. The facility appeared to be in compliance with all applicable requirements at that time.

14. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. There are no affected states or local programs within 50 miles of the facility.)

15. Other Regulatory Considerations

The following items were not required for Permit Application No. 7400104.20A:

- Professional Engineer's seal
- Zoning consistency determination, and
- Permit fee.

16. Recommendations

DAQ has reviewed the permit application(s) for Grady-White Boats, Inc. located in Greenville, Pitt County to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 05630T14.